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## Patent Abstracts of Japan

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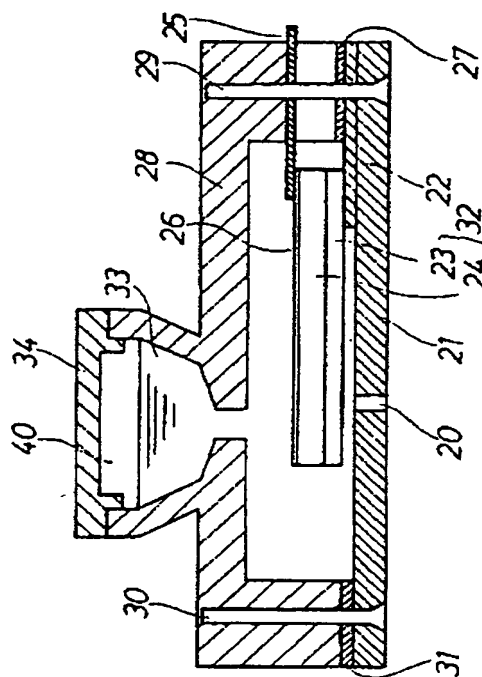
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TITLE : INK JET HEAD



**ABSTRACT :** PURPOSE: To obtain an ink jet head capable of emitting ink droplets stably at low drive voltage by allowing the movable part of an oscillator located on the top of a nozzle opening which generates a bending moment on a piezoelectric transducer by applying a selective electric signal to a piezoelectric element to oscillate in a direction crossing a nozzle plate approximately orthogonally.

CONSTITUTION: A piezoelectric transducer 32 is of a cantilever structure consisting of a laminated section of a piezoelectric element 24 and Ni foil 23, with one fixed end while other end is made free. An ink chamber is filled with recording ink 33 and the piezoelectric transducer 32 exists in the ink 33. The piezoelectric transducer 32 is so designed that a voltage is applied to the piezoelectric element to generate a bending moment inside and a curvature generated by the application of a voltage of 100V reaches at least  $1\text{m}^{-1}$ . If the piezoelectric transducer 32 which develops a deformation at a curvature of over  $1\text{m}^{-1}$  is capable of emitting ink droplets, each having a weight of at least  $0.1\mu\text{g}$  and a flying speed of at least,  $3\mu/\text{s}$ , an ink jet head with stable ink droplet discharge speed and volume, which can be operated at low voltage, can be realized with this piezoelectric transducer.

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